Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the applic tion:

Listing of Claims:

Claim 1. (previously presented) A process for capping an extreme y low dielectric constant ("ELK") film for a semiconductor device, the process comprising:

forming an ELK film on a substrate; and

depositing an amorphous silicon carbide capping layer on said ELK filn ,

wherein the amorphous silicon carbide capping layer remains in the semiconductor device.

Claim 2. (previously presented) The process of claim 1 further cor prising forming a carbon-doped silicon oxide capping layer on the amorphous silicon carbide c pping layer, wherein the carbon-doped oxide layer has a dielectric constant less than the diele tric constant of the amorphous silicon carbide capping layer.

Claim 3. (previously presented) The process of claim 1 wherein sa d amorphous silicon carbide capping layer is hydrogenated, and has a dielectric constant f approximately 4.5.

Claim 4. (previously presented) The process of claim 1 wherein sa d amorphous silicon carbide capping layer is copper diffusion resistant.

Claim 5. (previously presented) The process of claim 1 wherein sa d amorphous silicon carbide capping layer does not adversely react with said ELK film tc substantially degrade said ELK film's dielectric property.

Claim 6. (previously presented) The process of claim 1 wherein said amorphous silicon carbide capping layer has an adhesion strength to said ELK film of greater than 35 MPa.

Claim 7. (previously presented) The process of claim 1 wherein said amorphous silicon carbide capping layer permits no substantial penetration of moisture

Claim 8. (previously presented) The process of claim 1 wherein a combined dielectric constant for a stack comprising said ELK film and said silicon carbide capping layer is less than 3.0.

Claim 9. (original) The process of claim 8 wherein the combined dielectric constant is less than 2.5.

Claim 10. (previously presented) The process of claim 1 wherein said ELK film has a dielectric constant of less than 2.5.

Claim 11. (previously presented) The process of claim 4 wherein said ELK film has a dielectric constant of less than 2.5.

Claim 12. (original) The process of claim 1 wherein said amorphous silicon carbide capping layer is an amorphous, hydrogenated silicon carbide layer deposited by

introducing a silicon containing precursor, a carbon containing precursor, and a carrier gas into a chamber; and

applying energy to react said silicon containing precursor and said carbon containing precursor to deposit said amorphous, hydrogenated silicon carbide capping layer on said ELK film in a non-oxidizing environment.

Claim 13. (previously presented) The process of claim 12 wherein said silicon containing precursor comprises an organosilane compound.

Claim 14. (original) The process of claim 12 wherein said silicon containing precursor and carbon containing precursor are derived from a common organosilane precursor.

Claim 15. (original) The process of claim 12 wherein said silicon carbide capping layer is deposited at a temperature of between approximately 100° to 450°C.

Claim 16. (original) The process of claim 12 wherein applying energy comprises generating a plasma in said chamber.

Claim 17. (original) The process of claim 1 further comprising depositing a carbon-doped oxide layer on said amorphous silicon carbide capping layer.

Claim 18. (original) The process of claim 17 wherein said carbon-doped oxide layer is a carbon-doped silicon oxide layer formed by:

introducing a silicon containing precursor, a carbon containing precursor, and a process gas into a chamber, said process gas including oxygen; and

providing a plasma in said chamber to react said silicon containing precursor and said carbon containing precursor in the presence of said plasma to deposit said carbon-doped silicon oxide layer on said amorphous silicon carbide capping layer.

Claim 19. (original) The process of claim 18 wherein said oxygen is introduced at a rate to produce an oxygen-starved plasma for depositing said carbon-doped silicon oxide layer.

Claim 20. (original) The process of claim 18 wherein said silicon containing precursor and carbon containing precursor are derived from a common organosilane precursor.

Claim 21. (original) The process of claim 20 wherein said organosilane precursor is provided at a rate approximately six times that of the flow of oxygen gas.

Claim 22. (previously presented) A process for capping an extremely low dielectric constant ("ELK") film using a silicon carbide material in a semiconductor device, the process comprising:

forming an ELK film on a substrate; and

depositing a silicon carbide capping layer having a dielectric constant of approximately less than 5 on said ELK film, where said silicon carbide layer is produced by a process providing a silicon containing precursor, a carbon containing precursor and process gases comprising oxygen, helium and nitrogen, and providing said silicon containing precursor and said carbon containing precursor at a rate approximately six times that of the oxygen and further comprising reacting said silicon and said carbon containing precursor in a chamber having a pressure in the range of about 1 to 15 Torr with an RF power source supplying a power at approximately 300-600 watts and a substrate surface temperature between approximately 100° and approximately 450° C and having a shower head to substrate spacing of approximately 200 to approximately 600 mils, and wherein said capping layer has an adhesion strength of at least about 35 MPa to said ELK film, and wherein the dielectric constant for a stack consisting of said ELK film and said silicon carbide layer is at most approximately 3.0, and

wherein the silicon carbide capping layer remains in the semiconductor device.

Claim 23. (previously presented) A stack having a capped extremely low dielectric constant ("ELK") layer for a semiconductor device, the stack comprising:

a substrate;

an ELK layer formed on said substrate;

an amorphous silicon carbide layer deposited on said ELK layer; and

a carbon-doped oxide layer deposited on said amorphous silicon carbide layer, wherein the amorphous silicon carbide layer and the carbon-doped oxide layer remain in the semiconductor device.

Claim 24. (original) The stack of claim 23 wherein said amorphous silicon carbide layer is an amorphous, hydrogenated silicon carbide layer having less than about 5 atomic % oxygen.

Claim 25. (previously presented) The stack of claim 24 wherein said amorphous silicon carbide layer is a hydrogenated amorphous silicon carbide layer that has substantially no oxygen.

Claim 26. (original) The stack of claim 23 wherein said amorphous silicon carbide layer is deposited from a silicon-containing and carbon-containing precursor in a non-oxidizing environment.

Claim 27. (original) The stack of claim 23 wherein said carbon-doped oxide layer is a carbon-doped silicon oxide layer.

Claim 28. (original) The stack of claim 23 wherein said carbon-doped oxide layer comprises about 30-50 atomic % oxygen.

Claim 29. (original) The stack of claim 23 wherein said carbon-doped oxide layer comprises about 10-30 atomic % carbon.

Claim 30. (original) The stack of claim 23 wherein said amorphous silicon carbide layer has an effective dielectric constant of approximately less than 5.

Claim 31. (original) The stack of claim 23 wherein said carbon doped oxide layer has an effective dielectric constant of approximately less than 3.5.

Claim 32. (original) The stack of claim 23 wherein said stack has a combined dielectric constant of approximately less than 3.

Claim 33. (original) The stack of claim 32 wherein said stack has a combined dielectric constant of approximately less than 2.5.

Claim 34. (canceled)

Claim 35. (original) The stack of claim 23 wherein said amorphous silicon carbide layer has an adhesion strength to said ELK layer of at least about 35 MPa.

Claim 36. (original) The stack of claim 23 wherein said amorphous silicon carbide layer is a moisture resistant layer.

Claim 37. (previously presented) A stack having a capped extremely low dielectric constant ("ELK") layer, comprising:

a substrate;

an ELK layer formed on said substrate;

an amorphous silicon carbide layer deposited on said ELK layer; and

a carbon-doped oxide layer deposited on said amorphous silicon carbide layer,

wherein said carbon-doped oxide layer is produced by a process providing a silicon containing precursor, a carbon containing precursor and process gases comprising oxygen, helium and nitrogen, and providing said silicon containing precursor and said carbon containing precursor at rate approximately six times that of the oxygen and further comprising reacting said silicon and said carbon containing precursor in a chamber having pressure in the range of about 1 to 15 Torr with an RF power source supplying a power at a rate of approximately 300-600 watts and a substrate surface temperature between approximately 100° and approximately 450° C and having a shower head to substrate spacing of approximately 200 to approximately 600 mils.

Claim 38. (original) The stack of claim 23 wherein said carbon-doped oxide layer is produced in an oxygen-starved plasma.

Claim 39. (previously presented) A process for capping a low dielectric constant film in a semiconductor device, the method comprising:

forming a porous, low-dielectric constant film on a substrate; and

depositing a capping layer on the low-dielectric constant film, wherein the capping layer comprises a carbon-doped oxide or an amorphous silicon carbide film, and wherein the capping layer has a dielectric constant of about 5.0 or less,

wherein the capping layer remains in the semiconductor device.

Claim 40. (previously presented) The process of claim 39 wherein the capping layer has a dielectric constant of about 4.5 or less.

Claim 41. (previously presented) The process of claim 39 wherein the capping layer is in direct contact with the porous, low-dielectric constant film.

Claim 42. (previously presented) The process of claim 39 wherein the porous, low-dielectric constant film has a dielectric constant less than about 2.5.

Claim 43. (previously presented) The process of claim 39 wherein the porous, low dielectric constant film and the capping layer are in a stack of layers, and wherein the stack of layers has an effective dielectric constant less than about 3.0.

Claim 44. (previously presented)The process of claim 1 wherein the ELK film comprises Si-O bonds.

Claim 45. (previously presented) The stack of claim 23 wherein the ELK film comprises Si-O bonds.

Claim 46. (previously presented) The process of claim 39 wherein the porous, low dielectric constant film comprises Si-O bonds.

Claim 47. (previously presented) The process of claim 1 wherein the ELK film comprises a porous material.

Claim 48. (previously presented) The process of claim 47 wherein the porous material comprises silicon oxide.

Claim 49. (previously presented) The process of claim 47 wherein the capping layer is within a stack of ELK films.

Claim 50. (previously presented) The process of claim 47 wherein the capping layer has a breakdown voltage of 2 MV/cm or more.

Claim 51. (previously presented) The process of claim 39 wherein the porous, low dielectric constant film comprises silicon oxide.

Claim 52. (previously presented) The process of claim 39 wherein the capping layer is within a stack of ELK films.

Claim 53. (previously presented) The process of claim 39 wherein the capping layer has a breakdown voltage of 2 MV/cm or more.

Claim 54. (previously presented) The process of claim 39 wherein the capping layer comprises the carbon-doped oxide.

Claim 55. (currently amended) The process of claim ~~29~~ 39 wherein the capping layer comprises the amorphous silicon carbide film.